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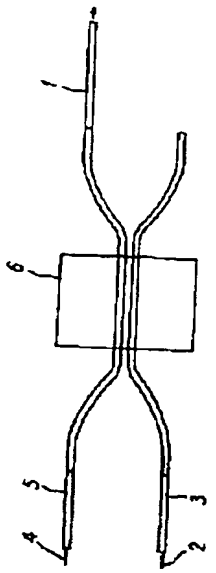
TITLE : FIBER LASER MEDIUM AND OPTICAL AMPLIFIER USING THE SAME



ABSTRACT : PURPOSE: To obtain the light of a 1.3μm band with high efficiency, and to enable connection with a fiber for infrared light for optical communication in low coupling loss by using the fluoride glass fiber simultaneously containing specific quantities of Nb and Eu in a core section.

CONSTITUTION: The composition of a fiber laser medium is composed of ZrF_4=50-58mol%, BaF_2=33-36mol%, LaF_3=3-6mol% and AlF_3=2-5mol%, and both NbF_3 and EuF_3 are brought to 1mol% or less The core diameter of the fluoride fiber is set at 5.5-7.5μm, a clad diameter at 125μm and a cutoff wavelength at 0.78-0.80. Excitation light 4 input to a synthesizer 6 through an optical fiber 5 is brought to approximately 95% of intensity, where a laser medium 1 begins to oscillate, laser beams 2 as an optical signal are input to the synthesizer 6 through an optical fiber 3, and an optical signal amplified is taken out of the laser medium 1 coupled with the output end of the synthesizer.